

REMARKS

This Response is submitted in response to the Non-Final Office Action dated January 10, 2007. Claims 16-27 and 29-30 have been amended. No new matter is added.

35 U.S.C. §112 Rejections

The Office Action rejected Claims 16-30 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. As noted above, Claims 16-30 have been amended to traverse such objections. Applicants respectfully submit that the amendments were made for clarification reasons and further should not be deemed to disclaim and/or narrow the claim scope in view of same.

The Office Action states, "As to claim 16, Applicant claims a cache device for storing data. However, there are no elements in the body of the claim for storing data."

Claim 16 now reads, in part, "a first data area for storing data."

The amendment is fully supported by the specification. For example, see the specification on page 4 line 24 – page 5 line 1, stating, "To solve the problems in cache control described above, the present invention provides a cache device, and a method and a computer program for controlling cached data that enable efficient use of a data storage area in a system."

The Office Action states, "As to claim 16, (line 5) Applicant claims a cache group table. Is this data or an actual physical element?" Claim 16 now reads, in part, "a second data area for storing a cache group table."

The Office Action states, "As to claim 16, (line 6) it is unclear as to what is being claimed. In the preamble, Applicant claims a cache device and describes the cache device in the body of the claim. However, in the body (line 6), Applicant is referring to 'the cache device,' of which Applicant is trying to define, and 'other cache devices,' which have not been defined. The scope of the invention cannot be realized since the invention, a 'cache device,' is referring back to itself."

Claim 16 now reads, in part, “a cache group table including group configuration information regarding a cache group including first data associated with the first cache device, and second data associated with the other one or more additional cache devices, wherein the additional cache devices are connected to the same network as the first cache device and are members of the cache group.”

Claim 21 now reads in part, “the controller judges which cache device of the cache group stores the requested data block and retrieves the data block from the cache device itself or other from the additional cache devices of the cache group according to the judgment.”

Claim 28 now reads in part, “retrieving the data block from the cache device itself or ~~other~~ the additional cache devices of the cache group.”

The amendments are fully supported by the specification. For example, see the specification on page 6 lines 17-22 stating, “[a]n embodiment of the cache device according to the present invention provides a cache device in which the cache group table includes an identifier of the content that is collaboratively controlled by the cache group, the number N of cache devices of the cache group, and group member numbers m assigned to respective cache devices.” The group member numbers m are one example of data that are associated with the cache device and other cache devices. Additionally, Figure 8 illustrates typical data of a cache group table, the group members list includes other cache devices in the cache group. Figure 3 illustrates a cache group connected to the same network.

The Office Action states, “[a]s to claim 16, 23, 30 what is ‘collaborative content control being carried out for the cache group.’”

Claims 16, 23 and 30 now read, “including identifying data associated with content data being controlled by the cache group ~~collaborative content control being carried out for the cache group.~~”

The amendments are fully supported by the specification. For example, see the specification on page 28 lines 4-7 stating, “[t]he cache group table stores information obtained based on the group configuration information described above, that is, identifiers of content each of which is collaboratively controlled in each set-up cache group.”

The Office Action states, “[a]s to claim 16, 23, 30 what does ‘out of data blocks including content based on the information included in the cache group table’ mean?”

Claim 16 now reads, “the data blocks being associated with the content data being controlled by the cache group out of data blocks including in content based on the information included in the cache group table.” Claims 23 and 30 now read, “the data blocks being stored in the cache device and associated with content data, the content data being controlled by a cache group, wherein a cache group table stores configuration information associated with the cache group, the cache group including the first cache device and one or more additional cache devices, the additional cache devices being connected to the same network.”

The amendments are fully supported by the specification. For example, see the specification on page 39 lines 16-23 stating, “[w]hen a cache device judges that there is a data block that needs to be removed from the LRU list, the cache device proceeds to step S106 and extracts an entry to be removed from the LRU list. In step S107, the cache device then judges whether content corresponding to the entry is registered in the cache group table. A cache group table stores identifies of content that is collaboratively controlled in each set-up cache group.”

The Office Action states, “[a]s to claim 16, 23 and 30 the phrase ‘for controlling the data blocks in the deletion pending status’ is vague. The term ‘controlling’ is vague and ambiguous. One of ordinary skill would not be able to know what is being done to control the data base. This limitation must be clarified.”

Claims 16, 23 and 30 now read, in part, “controlling the a status of data blocks.”

The amendments are fully supported by the specification. For example, see the specification on page 44 lines 9-13 stating, “[a]ccordingly, in step S118, the cache device removes the corresponding entry to be deleted from the LRU list an puts a corresponding entry in the free block list. In this case, the cache device deletes the corresponding data block.”

The Office Action states that claims 16 and 23 are incoherent, vague, grammatically incorrect, run-on and lacking a clear indication of what is being claimed. Applicants submit that the aforementioned amendments traverse such rejection.

The Office Action states, “[a]s to claim 17,22,24,29, Applicant claims ‘the controller carries out a process’. This language is vague and ambiguous. What is this process? Is the process the mathematical calculation? If so, Applicant must clearly state this fact. Applicant should note that mere mathematical calculation, as listed in claim 17, without a practical application of the calculated result, is nonstatutory subject matter. It should be noted that, in the listed calculation variable ‘m’ was not defined.”

Claims 17, 22, 24 and 29 now read, “carries out a ~~process~~calculation based on a block offset number C.”

Additionally, Claims 17, 22, 24 and 29 contain the language, “the respective data block is judged to be one of the data blocks in the deletion pending status when $V = m$.” Therefore, the calculation of $V=m$ results in the data block’s status being set to “deletion pending.”

Lastly, Claims 17, 22, 24 and 29 contain the language, “and group member numbers **m** assigned to respective cache devices.” (emphasis added). Therefore, Applicants respectfully submit that m is defined in the claim.

The Office Action states that there is insufficient antecedent basis for “the collaborative control” in Claims 18 and 25.

Claims 18 and 25 now read, “whether ~~the~~ collaborative control by the cache group is applicable to a data block.”

The Office Action rejects Claims 19 and 26 for “out of the data blocks” and “the controller controls the data blocks, other than the blocks in the deletion pending status.”

Claims 19 and 26 now read, “from a list of data blocks associated with the content data being controlled by the cache group~~out of the data blocks included in the content~~ based on the information included in the cache group table,” and “controlling the data block, that is not in the~~other than the data blocks in the~~ deletion pending status.”

The Office Action rejects Claims 20 and 27 for “the deletion pending list comprises a plurality of deletion pending lists,” and “and registers an entry corresponding to each of the data blocks in one list selected from the deletion pending lists according to the judgment.”

Claims 20 and 27 now read, in part, “wherein the deletion pending list ~~comprises~~ is a plurality of multi-level deletion pending lists where each level corresponding corresponds to a priority, the data blocks being stored in order of the priority, and the controller performs a judgment to determine ~~judges~~ the priority at which each of the data blocks is stored, and registers an entry corresponding to each of the data blocks in one list ~~selected from the level of the multi-level~~ deletion pending lists according to the judgment.”

The amendments are fully supported in the specification. For example, the specification on page 55 lines 1-20 state, in part, “[a]n embodiment in which a cache device includes multi-level deletion pending lists generated as data control lists will be described ... a cache device according to this embodiment includes a plurality of deletion pending lists ... [t]he content data blocks are divided into two groups according to priority in storing the content data blocks and put in the deletion pending lists (b1) and (b2) respectively.”

The Office Action states, “[a]s to claim 16,23,30 Applicant claims a method/device for ‘storing data ... and retrieving the cached data ... to send the cached data to the terminal.’ However, the cited method did not include any step to store data, retrieve cached data, nor send the cached data to the terminal. Thus the claimed invention is complete, as none of the purposes listed in the preamble has been satisfied by the body.”

Claim 23 now reads, in part, “storing data blocks” and “receiving a request for data; and transmitting the data.” Claim 30 contains similar language.

The amendments are fully supported by the specification. For example, see the specification on page 18 lines 24 – 25, stating “Cache devices 1 (211) to 4 (214) are connected to each other through the network, and temporarily store data.” Additionally, see the specification on page 19, lines 18-20 stating, in part, “When data corresponding to the URL of the content requested from the terminal is stored in a cache device, the data is read out from the cache device.”

The Office Action states that Claims 17-22, and 24-29 are rejected as being dependant upon a rejected patent claim incorporating its deficiencies. Applicants submit that Claims 16, 23 and 30 are amended and in patentable form. For at least the foregoing reasons, Applicants

submit that Claims 16, 23 and 30, and Claims 17-22 and 24-29 that depend therefrom, are in condition for allowance.

35 U.S.C. §101 Rejections

The Office Action rejects Claim 30 under 35 U.S.C. §101 for being directed to non-statutory subject matter (a computer program).

Claim 30 now reads, in part, "A computer program, on a computer readable medium." Applicants submit that the amendment to Claim 30 traverses said rejection, and that Claim 30 is in condition for allowance.

The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

Respectfully submitted,

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